Adaptive order of block backward differentiation formulas for stiff ODEs

ABSTRACT

In this paper, Adapative Order of Block Backward Differentiation Formulas (ABBDFs) are formulated using uniform step size for the numerical solution of stiff ordinary differential equations (ODEs). These ABBDF methods are of order four, five and six. The benefit of the ABBDF methods is the computation time in the computation of solutions. Numerical results are presented to demonstrate the advantage of implementing adaptive order selection in a single code.